

CLAIMS

1 A method for manufacturing a fluorocarbon film characterized by including a step (SA1) for introducing a mixed gas comprising a first carbon fluoride gas and a second carbon fluoride gas on a substrate placed inside a chamber, and depositing a fluorocarbon film on said substrate; and a step (SA2) for forming voids in said fluorocarbon film by selectively removing volatile components contained in said fluorocarbon film.

2 A method for manufacturing a fluorocarbon film, characterized by including a step (SA1) for introducing a mixed gas comprising a first carbon fluoride gas and a second carbon fluoride gas on a substrate placed inside a chamber, and depositing a fluorocarbon film on said substrate; and a step (SA2) for forming voids in said fluorocarbon film by selectively removing volatile components contained in said fluorocarbon film; wherein

said first carbon fluoride gas is a fluorine-containing compound having 4 to 5 carbon atoms; and said second carbon fluoride gas is a fluorine-containing compound having 6 to 12 carbon atoms.

3 The method for manufacturing a fluorocarbon film according to claim 2, characterized in that said first carbon fluoride gas is octafluorocyclopentene.

4 The method for manufacturing a fluorocarbon film according to claim 2, characterized in that said second carbon fluoride gas is hexafluorobenzene.

5 The method for manufacturing a fluorocarbon film according to claim 1 or 2, characterized in that said step (SA2) for forming voids includes a step for cleaning said fluorocarbon film with a supercritical fluid.

6 The method for manufacturing a fluorocarbon film according to claim 1 or 2, characterized in that said step (SA2) for forming voids includes a step for heating said fluorocarbon film.

7 The method for manufacturing a fluorocarbon film according to claim 1 or 2, characterized in that said chamber is a plasma exciting chamber that can internally generate plasma.

8 The method for manufacturing a fluorocarbon film according to claim 1 or 2, characterized in that said first carbon fluoride gas has relatively high volatility and said second carbon fluoride gas has relatively low volatility.

9 A fluorocarbon film characterized in that a large number of fine voids are internally formed, and specific inductive capacity is within a range of 2 or less.

10 A surface-coating material for a printed substrate for high-frequency circuits composed of the fluorocarbon film according to claim 9.

11 A gas adsorbing material that contains the fluorocarbon film according to claim 9.

12 An electronic device that uses the fluorocarbon film according to claim 9 in at least a part.